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ABSTRACT

The National Institute for Science Education (NISE) is an organization in which scholars from different disciplinary backgrounds work collaboratively to address the important issues in Science, Mathematics, Engineering, and Technology (SMET) education. This document reports on NISE Fellows' experiences based on these questions: (1) How did you learn about the NISE Fellow opportunity? (2) Why did you want to be a NISE Fellow? (3) How has the experience affected you? (4) What is your assessment of the value of the experience? and (5) How might NISE improve the quality of the Fellow experience? Appendices include: "Call for Applications and Nominations for Fellows"; "NISE Fellows and Affiliations"; and "Bibliography of NISE Fellows' Products." (YDS)

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National Institute for Science Education

University of Wisconsin-Madison . National Center for improving Science Education

Occasional Paper No. 7

NISE Fellows Program: Feedback From Past Fellows

Edited by Paula A. White

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National Institute for Science Education (NISE) Publications

The **NISE** issues papers to facilitate the exchange of ideas among the research and development community in science, mathematics, engineering, and technology (SMET) education and leading reformers of SMET education as found in schools, universities, and professional organizations across the country. The **NISE** Occasional Papers provide comment and analysis on current issues in SMET education including SMET innovations and practices. The papers in the **NISE** Research Monograph series report findings of original research. The **NISE** Conference and Workshop Reports result from conferences, forums, and workshops sponsored by the NISE. In addition to these three publication series, the **NISE** publishes Briefs on a variety of SMET issues.

The preparation of this paper was supported by a cooperative agreement between the National Science Foundation and the University of Wisconsin-Madison (Cooperative Agreement No. RED-9452971). At UW-Madison, the National Institute for Science Education is housed in the Wisconsin Center for Education Research and is a collaborative effort of the College of Agricultural and Life Sciences, the School of Education, the College of Engineering, and the College of Letters and Science. The collaborative effort is also joined by the National Center for Improving Science Education, Washington, DC. Any opinions, findings, or conclusions are those of the author and do not necessarily reflect the view of the supporting agencies.

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NISE Fellows Program: Feedback From Past Fellows

Edited by Paula A. White

National Institute for Science Education
University of Wisconsin-Madison

November 1998

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Introduction

The National Science Foundation's National Institute for Science Education (NISE) was established in 1995 at the University of Wisconsin-Madison. Funded through a five year cooperative agreement, the Institute is a place where scholars, both junior and senior, from disciplinary backgrounds spanning the Science, Mathematics, Engineering, and Technology (SMET) disciplines and social sciences, are working collaboratively in interdisciplinary teams to address the most important issues in SMET education. See Figure 1 for a chart of how the NISE is organized by teams.

The NISE recruits Fellows from a variety of stakeholder groups, including K-12 teachers and higher education faculty in SMET education. NISE Fellows work on projects related either to NISE teams, or, in some cases, to the Institute as a whole. The breadth and diversity of the NISE Fellows Program enhances the quality of discourse and maximizes the impact of NISE work.

Individuals wishing to apply for an NISE Fellowship are asked to submit the following three items: (1) a letter indicating the NISE team or teams they wish to work with, or what other work they would like to pursue that fits the NISE mission, and a brief discussion of their interests and background in this area, (2) a brief budget of salary and expenses required for the proposed work, and (3) a resume indicating work experience and publication record and the contact information for at least two references. Applications are reviewed continuously by the NISE and the NSF. Selection criteria include qualifications of candidates, match with the NISE mission, significance of the proposed work, the ability to work collaboratively, and the ability to produce valuable work in a timely fashion. See Appendix A for a Call for Applications.

Now in its fourth year, the NISE has accepted 36 Fellow applicants (a 50 percent acceptance rate). Currently, ten Fellows are working with the NISE. Thus far, twelve Fellows have served on the Systemic Reform Team, twelve have served on the Professional Development Team, nine on the College Level One Team, one on the Communicating with Mass Audiences Team, one on the Cognitive Studies of Interdisciplinary Collaboration Team, and two have had no team affiliation. One Fellow served on two teams, simultaneously. See Figure 2 for a list of Fellows by team and Appendix B for a list of Fellows and their affiliations.

In August, 1998, the following five questions were distributed to NISE Fellows for the purpose of gathering information on their experiences as Fellows:

1. How did you learn about the NISE Fellow opportunity?
2. Why did you want to be an NISE Fellow?
3. How has the experience affected you? e.g.:
   -moved your work in a new direction
   -brought you into new networks of professional groups
4. What is your assessment of the value of the experience?
5. How might the NISE improve the quality of the Fellow experience?

NISE Structure

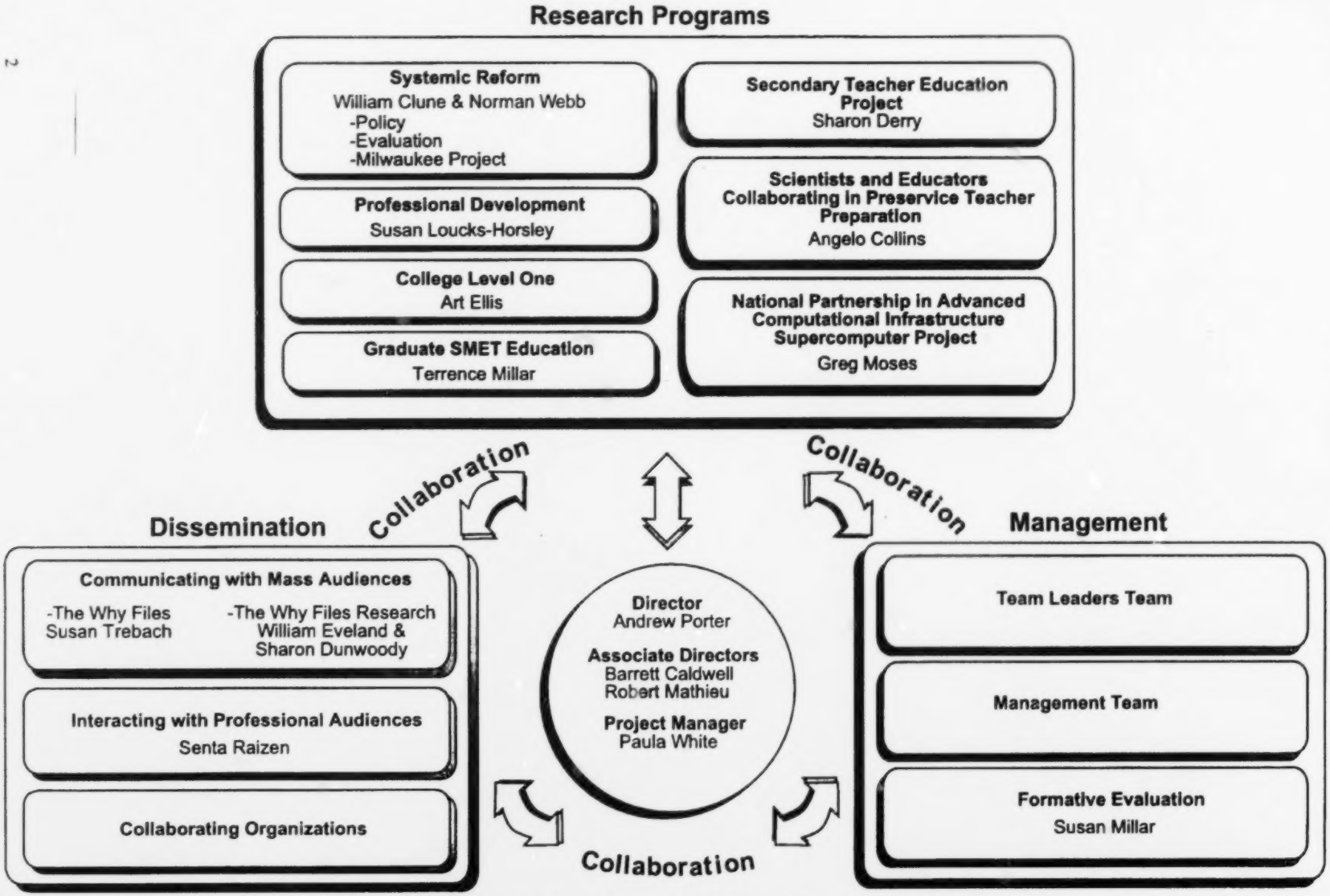

Figure 1. National Institute for Science Education organization chart

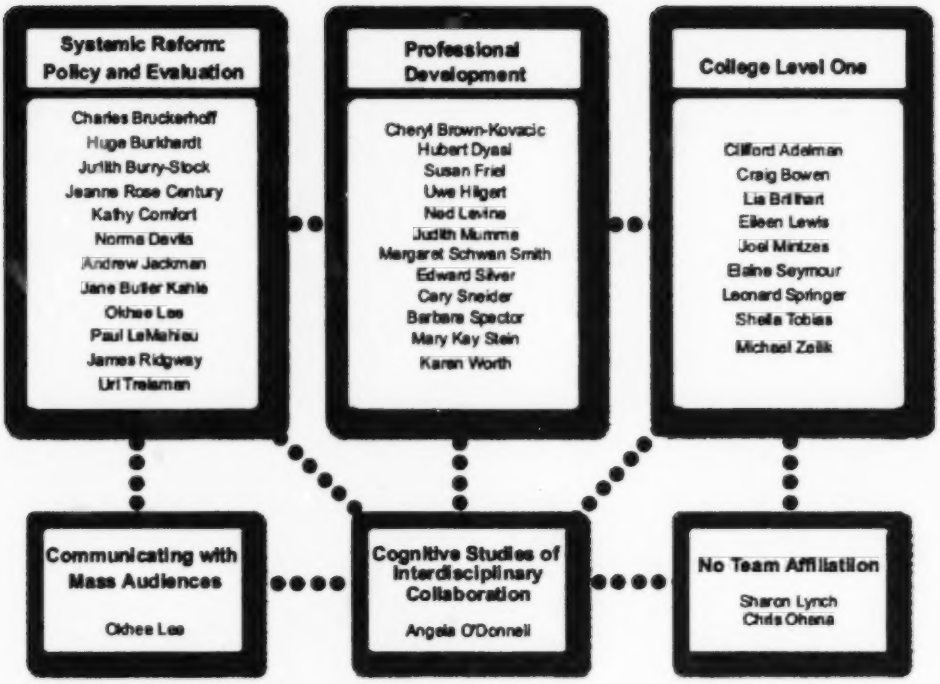

Figure 2. NISE Fellows by team

What follows is a summary of the responses received with 18 of the 26 past Fellows responding. The responses were overwhelmingly positive. Not all respondents provided responses to each question; a representative sampling of the responses is provided here.

How did you learn about the NISE Fellow opportunity?

It happened in the early formative stages of the Institute. I was invited to the first meeting of the College Level One Team, came to Madison, participated in the seminars, offered to do some work, and voila!, found myself invited to be an NISE Fellow. (Clifford Adelman, Senior Research Analyst, U.S. Department of Education).

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I learned about the NISE Fellow opportunity after striking up a conversation with Team Leader Norman Webb at a meeting where he spoke about systemic evaluation. I described to him how the work I was doing seemed compatible with some of his work and he told me about the NISE Fellowships. (Jeanne Rose Century, Senior Research Associate, Center for Science Education, Newton, Massachusetts).

I became familiar with the NISE Fellow opportunity through a contact at the Exxon Education Foundation. She encouraged me to consider applying because of the possible connections of my work with that of NISE. I then read the material on the NISE Web page and became quite interested in the overlap of some of my research with the issues addressed by groups in NISE. (Chris Ohana, Science Resource Teacher, Ring Magnet School, Des Moines, Iowa).

Team Leader Senta Raizen advised me of the NISE Fellowship opportunity in response to my telling her that I was going to take a sabbatical and would like to do more research on science teacher education. The application process seems straightforward and I found it to be fully acceptable. (Barbara Spector, Professor of Science Education, University of South Florida).

Why did you want to be an NISE Fellow?

The early feedback I received convinced me I was in good company, and that I would produce a couple of monograph-length studies that could be jointly published by the U.S. Department of Education and NISE, thus demonstrating interagency cooperation in serious research on higher education. Given the good company, I knew I would receive high quality guidance as the analyses feeding into these monographs proceeded and solid critical reviews when drafts of the studies were available. Furthermore, NISE could target appropriate and receptive audiences for this material, and I could invite other NISE researchers to draw on me for whatever help they need in national data analysis. (Clifford Adelman, Senior Research Analyst, U.S. Department of Education).

I thought I could give some input on the status of mathematics, science and engineering education in community colleges. (Lia Brillhart, Triton College, River Grove, Illinois).

I wanted to be an NISE Fellow for a number of reasons. First, it seemed to be an opportunity for me to pursue areas of common interest with others. I had been interested in the topic of evaluating systemic reform and was eager to explore this issue more in-depth. Second, I was interested in collaborating with others outside my group at the Education Development Center. It is always interesting to hear others' perspectives and experiences to enrich my own and hopefully our collective understanding of an issue (in this case, evaluating systemic reform). Finally, it seemed like an opportunity to establish working relationships with others that could be a starting point for future fruitful collaborations. (Jeanne Rose Century, Senior Research Associate, Education Development Center, Newton, Massachusetts).

I was (and am) the principal investigator of Ohio's Statewide Systemic Initiative and I was very interested in connecting with other researchers who were grappling with issues surrounding equity in systemic reform as well as the evaluation of systemic reform. The intellectual capacity of NISE (as well as WCER) was the primary reason that I decided to spend part of my sabbatical leave as an NISE Fellow. (Jane Butler Kahle, Professor, Miami University, Oxford, Ohio).

My institution was invited to the final round of presentations at NSF, and I was one of three representatives from my university. So, I was strongly interested in participating in a National Institute for Science Education. For many years, I've devoted myself to the professional development of teachers and other professionals in science and mathematics education, and was very happy and felt highly honored to be invited to be one of the first Fellows in professional development work. (Hubert Dyasi, Director, City College of New York).

Three reasons prompted my interest to become a Fellow: I) the work of examining and writing about professional development design, 2) the NISE leadership team, and 3) the other Fellows participating in this group. I have been involved in designing professional development for several years and this offered an opportunity to reflect on what I have learned and do so in a group of colleagues who could enrich my own understanding of the process. The people involved in this project are tops in their field and working with them offered an unparalleled opportunity for my own learning. (Judith Mumme, Director, Mathematics Renaissance Program, Camarillo, California).

There are some great people in Madison! The Fellowship let me explore some ideas I had when attending an NISE workshop (organized by Team Leader Norman Webb), which I tried out on a few people. The Fellowship offered a chance to do an extended piece of work, and to meet with people outside my normal ambit-like epidemiologists, physicists, ecologists-to explore common problems and to, share ideas on research methods, data analysis, and styles of thinking about change in complex systems. (James Ridgway, Professor, Lancaster University, Lancaster, UK).

It was an opportunity to work with leaders in the field on matters of import. (Edward Silver, Senior Scientist, University of Pittsburgh).

How has the experience affected you?

-New Directions:

The NISE experience put me on trajectories of scholarship that involved reading material I would not have otherwise examined. Indirectly, work with the College Level One Team motivated me to rethink what we mean by "College Level One" in the context of national data sets, and to test hypotheses defining "first year" extracts from the data bases in terms of elapsed time, enrolled time, and credit generation. This work found its way into a major paper presented at the 1998 National Forum of the Association for Institutional Research and will be seen again in a monograph under preparation for publication by

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the Department or Education. (Clifford Adelman, Senior Research Analyst, U.S. Department of Education).

The experience of being an NISE Fellow has affected me primarily by helping to focus my work in a more research-related direction. Although not directly related to my work as a Fellow, I recently have obtained an NSF research grant to pursue some of the issues that were related to the work I did as an NISE Fellow. I view this work and my NISE work as being complementary to each other. (Jeanne Rose Century, Senior Research Associate, Education Development Center, Newton, Massachusetts).

My involvement as a Fellow in the NISE has been most beneficial. It gave me an opportunity to reflect on the work I've been doing over the years, talk about it to outstanding professionals who provided me with positive perspectives I would otherwise have overlooked. They also illuminated aspects that I had not fully developed, for example, systematic follow-up of teachers we've worked with, and tighter assessment of our programs. (Hubert Dyasi, Director, City College of New York).

The experience has had an enormous impact on my own work in professional growth. It helped give language to work I was doing and brought new ways of "thinking about" that work. I have used the design process developed through this effort to assist teacher leaders to better understand the nature of their work. We now incorporate the Professional Development Team's book into our leadership institutes and use it as a guide to "remind" teacher leaders of the professional development process. (Judith Mumme, Director, Mathematics Renaissance Program, Camarillo, California).

The relationship with NISE has significantly affected the focus of my work. Initially, because of practicality, my work centered on cohorts within professional development schools with a tangent specific to mathematics and science education. The support and connections through my affiliation with NISE has allowed a much tighterfocus on math and science and student learning in cohorts. (Chris Ohana, Science Resource Teacher, King Magnet School, Des Moines, Iowa).

I am pleased with the work I did – I now understand a range of phenomena far better than I did. I have shifted my entire worldview, I think. I now have a view of change processes that I can generalize to a wide set of circumstances. In the UK, it convinced me that a move from a psychology department to an education department would be a good thing – I have now been appointed professor of education at the University of Durham. Having a learned and smart (not the same thing!) set of critics was extremely useful in sharpening my ideas and writings. It really spiced up my teaching! I taught a new Masters module on change that had great take up, and which really got students ex[illegible]ed. (James Ridgway, Professor, Lancaster University, Lancaster, UK).

My commitment to issues of teacher professional development has deepened. (Edward Silver, Senior Scientist, University of Pittsburgh).

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The Fellowship is influencing my current research and my teachings at both the graduate and undergraduate levels. I am pilot testing the findings of the NISE project as an analytical frame to study the Florida Higher Education Consortium for Mathematics and Science (HEC). The HEC is a statewide initiative made up of numerous approaches within six regions to reform teacher education. The draft NISE manuscript is currently being used as a text for my doctoral course on policy, change, and school improvement. Additionally, I am explicitly including perspectives on building bridges between preservice and inset-vice in my work with interns and cooperating teachers. (Barbara Spector, Professor of Science Education, University of South Florida).

-Networking of Professional Groups:

The NISE experience brought me into some new networks of professionals, and reestablished lost connections with such organizations as the American Society for Engineering Education. Even though I did not interact with them regularly, the NISE connection bolstered my relations with NSF staff, and this promises future productive ***cooperative undertakings.*** (Clifford Adelman, Senior Research Analyst, U.S. Department of Education).

I have found the NISE Fellow experience to be particularly valuable in networking with other groups of people (in particular, the NISE staff themselves) and I am hopeful that there will be future opportunities for continued collaboration. (Jeanne Rose Century, Senior Research Associate, Education Development Center, Newton, Massachusetts).

Through NISE, I came to work with many thoughtful professionals I would not have directly interacted with, even though I knew most of their work. It was very valuable for me to interact with professionals in mathematics education and in technology education. I also got to work closely with NSF staff I would otherwise not have even known about. Collaborating on the preparation of the professional development book brought me back to a high level of intensity over an extended period – something one does not generally have in a teaching university. The NISE Forums have just been fantastic in introducing me to the education work of professors in the liberal arts and sciences, and to electronic media. (Hubert Dyasi, Director, City College of New York).

Aside from facilitating my work through direct support, the Fellowship has been most useful by putting me on a mailing list that provides me with the most recent reports put out by NISE. Also, as NISE members tend to be policymakers and influencers, I pay more attention to NISE Fellows' work when I come across it in the professional literature. I understand how this group comes to influence policy matters and related research. (Sharon Lynch, George Washington University, Washington, DC).

The experience of working across mathematics and science as a Fellow was very enlightening. Most of my experience had been with mathematics educators only and the opportunity to engage professionally with science educators around professional

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development issues was inspiring. There are great similarities in our work. (Judith Mumme, Director, Mathematics Renaissance Program, Camarillo, California).

A dramatic benefit of this affiliation has been my access to people who are working on these issues. For example, I have had email correspondence with Mary Kennedy (on the College Level One Team) about her experience with preservice cohorts and her recommendations of contacts. I have contacted other NISE Fellows and expect that these connections will also add to the depth of my own work. Perhaps one of the most beneficial contacts has been with the NISE Director, Andrew Porter. He has made significant and careful recommendations for my project. His careful and detailed analysis of my midterm report helped both to sharpen my focus and to provide encouragement. (Chris Ohana, Science Resource Teacher, King Magnet School, Des Moines, Iowa).

My network was expanded through NISE-sponsored meetings and the processes used in collecting data from 60 higher education units (individual institutions, groups of institutions, and statewide initiatives) engaged in reform. The NISE Forum provided some pivotal insights for me. Collaborating with Susan Mundry, the project coordinator, was especially enriching and rewarding. I learned a great deal from her perspective as a product developer in the private sector. (Barbara Spector, Professor of Science Education, University of South Florida).

What is your assessment of the value of the experience?

I valued and enjoyed working with Norman Webb's Systemic Reform Team. I was very interested in the topic of the conference on Evaluation of Systemic Reform and the opportunity to write a discussion paper. I have long stayed in touch with Norman Webb and Tom Romberg, and continue to work closely with Jim Ridgway. (Hugh Burkhardt, Professor, Shell Centre for Mathematics, Nottingham, England).

Participating as an NISE Fellow was, without a doubt, the best experience of my career. I found challenging intellectual ideas, interesting problems, and creative solutions in my interactions with colleagues at NISE, with other Fellows, and with the three research workshops/seminars with which I interacted. I particularly liked, and benefited by, the flexible schedule which Team Leader Norman Webb and I were able to set up for my Fellowship. I recommend that NISE keep (or extend) that flexibility for all Fellows. In addition, I think that bringing together Fellows at different career stages has merit and recommend a continuation of that policy. Last, the November 20-21, 1996 Workshop that Norman Webb and I organized (and NISE supported) was critical to the development of the equity metric; the availability of both human and fiscal resources to sponsor such a workshop when the need arose was particularly important, and I recommend support of similar activities. (Jane Butler Kahle, Professor, Miami University, Oxford, Ohio).

Since this Fellowship happened somewhat serendipitously and irregularly, my conclusions may be different from those of other Fellows. I think that NISE should be open to such serendipitous events and not confine fellowships wholly to formal processes.

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Then again, because I am a federal employee, no money can change hands, so, in essence, whatever I did for and with NISE had no budget line-that magical button that requires a formal process. I produced some early analyses of course-taking, grades, and connections to students' high school curriculum, and received some very helpful feedback from a variety of NISE staff and affiliated folks. (Clifford Adelman, Senior Research Analyst, U.S. Department of Education)

The main value of my experience as an NISE Fellow was the fact that it pushed me to deeply consider and write about complicated issues related to systemic change. Although many of us struggle with difficult issues, we rarely have the time to discuss them with others and think and write critically about them. Although I found this writing to be extremely challenging, it has enhanced my understanding of the issues I focused on and of the other issues we focused on in the book as a whole. (Jeanne Rose Century, Senior Research Associate, Center for Science Education, Newton, Massachusetts).

One of the most important dividends for me was to work in partnership with outstanding professionals in the preparation of the book on the design of professional development for science and mathematics teachers. In my institution I have very little opportunity to work continually on a single project over a long period with professionals who are engaged in professional work that is very closely related to mine. The NISE Fellowship gave me that opportunity. An added value was, therefore, the accessibility of a very strong collegial group whose members, though in different parts of the country, have an inspiring presence through their work and through correspondence. (Hubert Dyasi, Director, City College of New York).

This was a very worthwhile experience. The Fellowship helped me reflect on my own work and expanded my understanding about professional development. The fact that we met several times over a period of time was especially beneficial, allowing "soak time" and time to reflect on and reconsider ideas. (Judith Mumme, Director, Mathematics Renaissance Program, Camarillo, California).

I found it extremely valuable – my best piece of professional development in over a decade. (James Ridgway, Professor, Lancaster University, Lancaster, UK).

I enjoyed my involvement, and I continue to stay involved one year after. (Edward Silver, Senior Scientist, University of Pittsburgh).

The in-depth understanding I developed about teacher education reform throughout the nation positioned me to shift the focus of my long-standing research interest in how change occurs in education. My focus was on what inservice teachers do. It has changed to a multitude of questions inherent in creating an articulated continuum of learning opportunities from preservice through career-long inservice education for science and mathematics. (Barbara Spector, Professor of Science Education, University of South Florida).

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How might the NISE improve the quality of the Fellow experience?

I think that the Fellow experience could have been enhancedfor me in two ways. First, I would have liked to have been one of several Fellows. For the first half of my Fellow year, I was the only Fellow working on the evaluation book; I would have enjoyed more collaborative conversations with more people earlier on. Second, the first half of the year focused on conceptualizing the book with the second halffocused primarily on writing. I would have enjoyed more inputfrom others (such as the Fellows who were later brought on for the writing stage) earlier on. (Jeanne Rose Century, Senior Research Associate, Education Development Center, Newton, Massachusetts).

I had so much fun and learned so much, I really don't know how NISE might improve the experience. NISE did not abandon me after my Fellowship duties were done. I receive literature and copies of reports from NISE. I receive invitations to NISE Forums, which are very, very -valuable. (Hubert Dyasi, Director, City College of New York).

I cannot think of any way that NISE could improve the actual Fellow experience. However, I think that continued connections, beyond the Fellowship year, are desirable. Opportunities to attend (at my expense) NISE-sponsored colloquium and workshops in Madison, in addition to the NISE Annual Forum, would have been ideal for me. (Jane Butler Kahle, Professor, Miami University, Oxford, Ohio).

I do wish there had been sufficient resources to bring us back together during the second year while the Professional Development Team's book was being written and to meet with the new Fellows. It would be helpful to bring all the Fellows on the Professional Development Team together to discuss the issues generated from each year's experience. (Judith Mumme, Director, Mathematics Renaissance Program, Camarillo, California).

Nothing leaps to mind-maybe more NISE seminars? Actually, it is hard to judge this, I went to more lectures at NISE than I would do at my home institution-maybe more chance to talk about my other academic work? (James Ridgway, Professor, Lancaster University, Lancaster, UK).

The Fellowship experience was outstanding. The only recommendation I have is to create opportunities for the Fellows to learn more about other projects going on under the umbrella of NISE, NCISE, and WestEd. (Barbara Spector, Professor of Science Education, University of South Florida).

Conclusion

Based on feedback from Fellows, the NISE Fellows program has been overwhelmingly successful. The Fellowships have enabled recipients to move in new directions, network with SMET researchers, and produce quality research. First, Fellows learned about the opportunity through a variety of methods. Resources and contacts included attending conferences, workshops, and NISE Forums and talking to NISE Team Leaders, Team

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Members, other NISE Fellows as well as staff members at NSF, and accessing NISE publications and the NISE Web site: (***http://www.wcer.wisc.edu/nise***).

Second, the primary motivation for NISE Fellows to apply for the position has been to collaborate and connect with other researchers involved in SMET education. Applicants were also motivated by the knowledge that the Fellowship would provide a mechanism to produce research monographs and the opportunity to receive high quality guidance (see Appendix C for a bibliography of NISE Fellows' Products). Based on the responses, the NISE Fellowship experience has had an overwhelmingly positive impact on Fellows. As far as moving Fellowship recipients in new directions, respondents indicated that the Fellow experience has

- Provided exposure to reading materials might not have examined otherwise
- Produced quality articles wouldn't have worked on otherwise
- Enabled a focus in a research-related direction
- Served as motivation for subsequent additional grants related to research conducted as an NISE Fellow
- Provided exposure to perspectives might otherwise have overlooked
- Illuminated aspects not fully developed previously
- Provided new language and ways of thinking about research already working on
- Aided in shifting world view
- Spiced up teaching
- Deepened commitment to SMET issues

Third, as far as networking of professional groups, respondents indicated that the Fellowships have had the following results:

- Opportunities to network with professionals who are outstanding in their fields
- Interaction with a wider range of professionals
- New insights from experts in SMET education reform
- Interaction with other NISE Fellows, NISE Team Leaders and Team Members and bolstered relations with NSF staff

Fourth, while it is clear that the Fellowships encompassed a wide variety of experiences, descriptions such as "the best experience of my career" or "my best piece of professional development in over a decade" make it apparent that the overall assessment of the experiences were positive. NISE Fellows not only found challenging intellectual ideas, interesting problems, and creative solutions but were also pushed to deeply consider and write critically about complicated issues related to SMET education issues. In addition to the items summarized above, the value of the Fellowship experience has been to provide

- An opportunity to work continually on a single project over a long period with professionals who are engaged in SMET research
- Access to a very **collegial** group with closely related interests
- Contact with NISE Team Members long after the Fellowship

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Fifth, while the majority of responses indicated that Fellows were pleased with their Fellowship experience, a few recommendations and suggestions for improvement were made

- The opportunity to work with more Fellows on a Team
- Continue connections beyond the Fellowship year
- Opportunities to attend NISE-sponsored workshops and Forums beyond the Fellowship
- Organize meetings of all the Fellows from one team to discuss issues generated during the Fellowship
- Offer more NISE seminars
- Create more opportunities to learn about other NISE and NISE-related projects

Many aspects of these recommendations have already been incorporated by the NISE Leadership Team and even further consideration is being given to these suggestions.

Appendix A

Call for Applications and Nominations for Fellows

The mission of the NISE is to help ensure that U.S. students leave the educational system with an ability to make informed decisions about science, mathematics, engineering, and technology (SMET) issues they will encounter in daily life. The NISE conducts and synthesizes research on education in SMET from kindergarten to graduate school. It undertakes sustained study of the most critical issues in SMET education today, such as school processes that can ensure equity of outcomes and policies that would improve the development of a modern technical workforce.

In July 1995, the NISE was established at the University of Wisconsin-Madison and has a five-year cooperative agreement with the Education and Human Resources Directorate of the National Science Foundation (NSF). The National Center for Improving Science Education (NCISE) in Washington, DC, is a partner with UW-Madison in this endeavor. The director of the NISE is Andrew Porter, Professor of Educational Psychology. The associate directors are Barrett Caldwell, Associate Professor of Industrial Engineering and Library and Information Studies, and Robert Mathieu, Professor of Astronomy.

The NISE invites applications and nominations for Fellows to join us in pursuing our mission. The work of the NISE falls into the programs and projects listed below.

Research Programs

- ***Systemic Reform: Policy and Evaluation***
- ***Professional Development***
- ***College Level One***
- ***Secondary Teacher Education Project***
- ***Scientists and Educators Collaborating in Preservice Teacher Preparation***
- ***Graduate Science, Mathematics, Engineering, and Technology Education***
- ***National Partnership in Advanced Computational Infrastructure Supercomputer Project***

Dissemination Programs

- ***Interacting with Professional Audiences***
- ***Communicating with*** Mass ***Audiences***
  - ***-The Why Files***
  - ***-The Why Files Research***

More detailed information about the objectives and activities of the NISE can be found in the NISE Overview. This Overview can be obtained by sending an e-mail message to niseinfo@mail.soemadison.wisc.edu or by accessing the NISE World Wide Web site (***http://www.wcer.wisc.edu/nise***).

The NISE recruits Fellows from a variety of stakeholder groups, including K-12 teachers and higher education faculty in science, mathematics, engineering, and technology education, as well as industry, private foundations, the media, and government. NISE Fellows work on projects related either to NISE teams or, in some cases, to the Institute as a whole. The breadth and diversity of the NISE Fellows Program enhance the quality of discourse and maximize the impact of NISE work.

Individuals wishing to apply for an NISE Fellowship are asked to submit the following three items:

1. a letter indicating the NISE team or teams you wish to work with, or what other work you would like to pursue that fits the NISE mission, what you would hope to accomplish, and a brief discussion of your interests and background in this area,
2. a brief budget of salary and expenses required for the proposed work, and
3. a resume indicating work experience and publication record and the contact information for at least two references.

If you are nominating someone, include contact information for that individual and a brief summary of what you think he or she can contribute to the NISE effort.

Applications are reviewed quarterly by the NISE and the National Science Foundation. Selection criteria include qualifications of the candidate, match with the NISE mission, significance of the proposed work, the ability to work collaboratively, and the ability to produce valuable work in a timely fashion.

All application materials should be send to:

Dr. Paula A. White
National Institute for Science Education
University of Wisconsin-Madison
1025 West Johnson Street
Madison, WI 53706

Appendix B

NISE Fellows and Affiliations

Clifford Adelman, Senior Research Analyst, U.S. Department of Education, Washington, DC

Craig **Bowen,** Professor, Department of Chemistry and Biochemistry, University of Southern Mississippi-Hattiesburg

Lia Brillhart, Triton College, River Grove, Illinois

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Karen Worth, Senior Scientist, Education Development Center, Newton, Massachusetts

Michael Zeilik, Professor of Physics and Astronomy, University of New Mexico–Albuquerque

Appendix C

Bibliography of NISE Fellows' Products

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Kahle, J. R. (1996, October). ***Research, evaluation, policy, and practice seminar.*** Panelist, Division of Research, Evaluation, and Communication, National Science Foundation, Washington, DC.

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Smith, K. A., & Springer, L. (1998, March). ***Cooperative learning in science, mathematics, engineering, and technology: The state of the art.*** Workshop presented at the annual meeting of the American Association for Higher Education, Atlanta, GA.

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Smith, M. S., & Silver, E. A. (1998, April). ***Dilemmas in designing professional development for science and mathematics teachers: Professional development at Franklin Middle School.*** Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.

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